

What is claimed is:

1. An inverter system equipped with an inverter,  
said inverter comprising:
  - 5 an upper ECU operating under electric supply of a low-voltage battery;  
a communication microcomputer receiving an instruction from said upper ECU;  
a motor control microcomputer receiving an instruction from said  
10 communication microcomputer;  
a gate driving circuit controlled by said motor control microcomputer; and  
a switching element driven by said gate driving circuit for converting a direct current of a high-voltage battery into an alternating current to drive  
15 a motor,  
wherein  
said upper ECU and said communication microcomputer are connected to each other via high-speed communication means to transmit instructions,  
20 said communication microcomputer and said motor control microcomputer are connected to each other via low-speed communication means to transmit instructions,  
an insulation boundary is defined between said communication microcomputer and said motor control microcomputer to isolate a  
25 low-voltage side electric component receiving electric power of said low-voltage battery from a high-voltage side electric component receiving electric power of said high-voltage battery, and  
insulation signal transmitting means is disposed on said insulation boundary to assure insulation and transmit signals.

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2. The inverter system in accordance with claim 1, wherein said motor drives an electrically-driven compressor for an automotive vehicle.

3. The inverter system in accordance with claim 1, wherein said  
5 high-speed communication means has a communication speed exceeding 20 kbps.

4. The inverter system in accordance with claim 3, wherein said high-speed communication means is a CAN protocol.

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